

EVALUATION OF AGRICULTURALLY ORIENTED
AND WOOD-BASED MANUFACTURING OPPORTUNITIES
IN CARROLL COUNTY, GEORGIA

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Foreword

The rapid decline and shifts within agriculture in Carroll County typify the problems created by economic change throughout Georgia in recent years. New agricultural payrolls have developed, although agricultural employment as such has continued to decline.

This report is a modification of the analyses originally intended on manufacturing possibilities which might be developed out of the existing agricultural base. Since some of the specific possibilities such as food processing plants did not prove feasible, this report and the earlier one on wooden pallets focus ^{✓✓} principally on wood products.

This report is part of the second year's work of an Area Re-development Administration "demonstration" project designed to boost the Carroll County economy through a three-year research-technical assistance-action program.

Comments or questions regarding this report or the over-all study are invited.

Kenneth C. Wagner, Chief
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Summary

Carroll County agriculture has been revolutionized in recent years by the pronounced shift from crop farming to livestock and poultry production. In 1939, all crops constituted 82.3% and all livestock and livestock products 16.8% of the value of all farm products sold; by 1959, the situation had almost completely reversed. Furthermore, the 1959 value of poultry and poultry products sold was three times the value of other livestock and livestock products sold.

In the 1951-1961 decade, Carroll County recorded a loss in volume of pine timber in both saw-timber and growing-stock size, in comparison with a nearly 60% increase in the area within a 50-mile radius of Carrollton. Carroll County's gains in hard hardwood were 97.7% in saw timber and 123% in growing stock, compared with 70.8% in saw timber and 117% in growing stock in the surrounding counties. Net volume of all timber in 1961 was 1,062,000 cords in Carroll County and 21,683,000 cords in the 50-mile area as a whole. It is estimated that, based upon sustained yield, approximately 79 million board feet of saw timber of all species and 548,000 cords of growing stock may be available annually for commercial use in the area.

Although manufacturing possibilities exist in Carroll County for producing auxiliary food items (such as ice cream, special dairy products, shortening, and edible fats and oils) and semi-prepared poultry products, the real potentials in development lie in expanding and upgrading cattle production by means of a commercial feed lot program. Not only would a feed lot operation improve agricultural income, it would also indirectly promote the local meat processing and feed and grain milling industries, which are presently operating well below capacity.

In the wood-based industry field, a pulp-based converting plant is a possibility. Expansion of Carroll County's furniture and fixtures industry also should be considered. Carrollton is only 50 miles from Atlanta, where wood household furniture sales are estimated to exceed \$22 million annually. Major Atlanta furniture retailers selling medium to low price items have stated that there is a recognized need for local producers of non-upholstered furniture. Prospects are also good for manufacturing filler pieces for wood or plastic veneer furniture.

The best industrial opportunities based upon local timber resources probably would be in the manufacture of products using low-grade and small-diameter timber because short-sighted cutting practices in the past have depleted the supply of high-quality saw timber in Carroll County. Since 57% of the standing saw timber in the county consists of hard hardwoods (predominantly oak) and the volume is increasing annually, finding ways to utilize these species should be an important consideration in developing the economy of the county.

Perhaps the best and most immediate opportunity for new wood-based industry in Carroll County lies in the manufacture of wooden pallets in conjunction with other wood products, such as flooring, which would supply scraps for pallets. The market in a 150-mile radius around Carrollton is 1.1 million to 1.3 million units a year and is projected to 2.8 million units by 1975. Only about 73% of the current demand is being supplied by manufacturers in the area. Equipment costs for a pallet plant may range from \$5,000 to over \$100,000, and gross profit averages more than 16% of sale price.

Other marketable items which may be made from low-grade soft or hardwood, along with pallets, include warehouse dividers and stock shelves; yard toys, fences, and shelters; and tool chests, tool racks, and work benches.

Carroll County could exploit the abundance of low-grade and small-size timber in the area and capitalize upon the rapidly increasing demand for synthetic types of wood materials by establishing a wood particle board or hardboard plant. Such a plant could utilize soft or hardwood in the form of cordwood, wood wastes, or wood residues.

The magnificent growth of the particle board industry in the past 10 years can be matched only by the growth of the plywood industry in the early 1930's, and it offers vast potentials for the future. A commercial particle board plant with a 60-ton daily capacity may require \$1 million to \$2 million investment. Carroll and its neighboring counties could supply over 20 times the raw material needed.

In the last 20 years, hardboard production has increased 10 times and consumption 11 times in the United States. It is estimated that an additional capacity of 1.2 billion square feet annually will be needed by 1970. A hardboard plant with a 200-ton daily capacity may require \$4 million to \$5 million

investment. The area in a 50-mile radius of Carrollton could furnish four to five times the volume of hardwood needed to operate a plant of this size.

Although investment costs for a wood particle board or hardboard plant are high, the opportunity of obtaining financial and technical assistance from the Area Redevelopment Administration or the Small Business Administration should be investigated.

INTRODUCTION

The purpose of this report is to describe and evaluate manufacturing opportunities for Carroll County, Georgia, based on the agricultural and forest resources of the county. It is intended merely to point out the possibilities for new ventures or expansions in the agriculturally oriented and wood-based industry fields, some of which may be suitable for further analysis in depth.

The relative importance of agriculture as an employment source in Carroll County has been declining rapidly in recent years. Agricultural employment decreased from one-half of the total civilian labor force in 1940 to less than one-tenth in 1962. During the same period, the percentage employed in manufacturing nearly doubled, rising to approximately 37% of the civilian labor force in 1962. Almost 10% of 1962 manufacturing employment in the county, however, was in the food and kindred products, lumber and wood products, and furniture and fixtures categories.

AGRICULTURAL AND TIMBER RESOURCES IN CARROLL COUNTY

Economic Trends in Agriculture

A major revolution has taken place in the agriculture of Carroll County in recent years -- the pronounced shift from crop farming to livestock and poultry production. While the acreage devoted to crops was seven times the total pasture land on Carroll County farms in 1939, by 1959 pasture land acreage had gained a slight lead over crop land. Table 1 illustrates the changes in agricultural revenues during the period from 1939 to 1959.

Table 1
CHANGING TRENDS IN AGRICULTURAL REVENUES
IN CARROLL COUNTY, GEORGIA

<u>Product Category</u>	<u>Value of Products Sold</u> <u>(as per cent of value</u> <u>of all farm products)</u>		
	<u>1939</u>	<u>1949</u>	<u>1959</u>
All crops	82.3	50.3	14.2
All livestock and livestock products	16.8	43.2	81.1
Horticultural specialties and forest products	0.9	6.5	4.7
Total (all farm products)	100.0	100.0	100.0

Source: Carroll County Farm Statistics, 1900-1960, Georgia Crop Reporting Service, Athens, Georgia.

Within the broad livestock category, the most dramatic growth was evidenced in the value of poultry and poultry products sold (up from 6.4% in 1939 to 53.9% in 1959) and in the value of other livestock and livestock products sold (up from 5.1% in 1939 to 18.8% in 1959).

Once Georgia's leader in cotton production, Carroll County produced only 1,920 bales in 1961. Wheat production dwindled from a high of 38,220 bushels in 1953 to only 3,360 bushels in 1962. The county produced 665,100 bushels of corn in 1955, but reduced to 361,000 bushels in 1961. Peaches declined from 20,722 bushels in 1939 to 1,105 in 1959, and sweet potatoes from 101,242 bushels in 1939 to 6,947 in 1959. All other crops except for a few small grains shared the same fate -- a sharp reduction in output.

A major factor contributing to the decline of crop farming in Carroll County may be the prevalence of small farms. A farmer engaged in crop farming on 50 acres or less finds it very difficult to compete with large commercial farms elsewhere. Although in Carroll County the average farm size increased from 60 acres in 1950 to 90 acres in 1960, the total number of farms decreased by 2,103. This acreage increase appears mainly as cattle and pasture land. The short growing season and insufficient water resources in the county also discourage the development of vegetable or fruit farms of commercial size.

During the period from 1939 to 1959, in contrast, all livestock registered gains in Carroll County. The number of chickens sold rose from 62,864 to 6,294,520, and the county now ranks eighth in the state in broiler production. Cattle and calves sold increased from 1,603 to 8,725; hogs and pigs sold from 4,650 to 11,363; and whole milk sold from 107,155 gallons to 1,202,831 gallons. Table 2 presents these increases in dollar value.

Table 2
VALUE OF ALL LIVESTOCK AND LIVESTOCK PRODUCTS SOLD, CARROLL COUNTY

	<u>1939</u>	<u>1949</u>	<u>1959</u>	<u>% Increase 1939-59</u>
Dairy products	\$ 81,677	\$ 223,993	\$ 577,220	607
Poultry & poultry products	99,142	636,571	3,696,650	3,629
Livestock & livestock products	79,563	430,831	1,291,437	1,523
Total	260,382	1,291,395	5,565,307	2,374

Source: Carroll County Farm Statistics, 1900-1960

Summary of Timber Resources

According to two Georgia forest surveys which were conducted in 1951 and 1961, Carroll County gained 24.5% in commercial forest acreage and 31% in all timber in the 10-year period, 1951-1961. In the area within a 50-mile radius of Carrollton (generally considered the economic distance in procuring wood raw materials for any wood-based manufacturing), the gains were 15.7% in commercial forest acreage and 73% in all timber.

Carroll County recorded a loss of pine timber both in saw-timber size and in growing-stock size, in comparison with the nearly 60% increase in the neighboring counties. It has been reported that heavy cutting of pine saw timber and pulpwood took place in Carroll County in the 1940's and early 1950's. Apparently, little attention was given to reforestation cut-over areas, with the result that hardwood growth now exceeds that of pine. Carroll County's gains in hard hardwood were 97.7% in saw timber and 123% in growing stock, compared with 70.8% in saw timber and 117% in growing stock in the surrounding counties.

Timber volume and percentage gain or loss are shown for Carroll County and the area in a 50-mile radius in Table 3.

Table 3
TIMBER RESOURCES IN CARROLL COUNTY
AND IN A 50-MILE RADIUS AROUND CARROLLTON, GEORGIA

	Carroll County			50-Mile Radius		
	1951	1961	Gain or Loss (%)	1951	1961	Gain or Loss (%)
Commercial Forest (in thousand acres)	152.8	190.2	+ 24.5	2,202.9	2,549.6	+ 15.7
Net Volume of Saw Timber (in million board feet)						
Pine	76.4	62.0	- 18.9	1,001.7	1,601.0	+ 59.8
Soft hardwood	14.8	14.4	- 3.0	431.6	737.1	+ 70.8
Hard hardwood	52.2	103.2	+ 97.7	584.1	997.5	+ 70.8
Total	143.4	179.6	+ 25.2	2,017.4	3,331.0	+ 65.1
Net Volume of All Timber (in thousand cords)						
Pine	436	342	- 22	6,572	10,307	+ 57
Soft hardwood	116	148	+ 28	2,211	4,666	+111
Hard hardwood	257	572	+123	3,088	6,709	+117
Total	809	1,062	+ 31	12,547	21,683	+ 73

Note: Counties in a 50-mile radius of Carrollton include 16 Georgia counties -- Bartow, Carroll, Clayton, Cobb, Coweta, Douglas, Fayette, Floyd, Fulton, Haralson, Heard, Meriwether, Paulding, Polk, Spalding, and Troup. Six Alabama counties are excluded because the more recent Alabama forest statistics are not available.

Sources: U. S. Department of Agriculture, Forest Service, Forest Statistics for Georgia, 1951-53 and Preliminary Forest Survey Statistics for North and North Central Georgia, 1961

PROSPECTS FOR AGRICULTURALLY ORIENTED AND WOOD-BASED INDUSTRY

Agriculturally Oriented Industry Potentials

A review of the existing food processing industries in a 50-mile radius of Carrollton may aid in assessing the potentials in Carroll County. In September 1962, the employment distribution in food industries in Carroll County was 45% in poultry packing, 29% in meat and sausage production, 4% in feed preparation, and 22% in miscellaneous items. The number of plants and employment distribution in Carroll and its neighboring counties are presented in Table 5.

Since grains, vegetables, and fruits are not produced in any appreciable quantity in the county, processing plants for these items will not likely be established. The possibility of opportunities in manufacturing auxiliary food items, such as ice cream, special dairy products, shortening, and edible fats and oils, should be investigated. Perhaps Carroll County's proximity to Atlanta could be exploited in marketing these products.

Although the poultry business is still expanding, it is reported that the saturation point has been reached. The combination of depressed prices, export barriers which are being set up by the European Common Market, and the difficulties of small producers lowers economic growth potential in this field considerably. Consideration might be given, however, to diversification of the present poultry processing industry by the addition of a program of precooking and preparation of "novelty packs."

Opportunities will exist in the field of fresh and packaged meats if production of livestock can be expanded. The existing facilities appear to be adequate to handle the present livestock population in the county.

The real potentials in development lie in expanding and upgrading cattle production by means of a commercial feed lot program. A commercial feed lot is an operation in which the lot owner gathers together several hundred head of cattle, either through outright purchase or through consignment, and fattens them for market through a feeding program which may range from a minimum of six weeks to a maximum of four months. When the young cattle are fattened into commercial-grade beef, they are sold for slaughter.

Table 5
FOOD PROCESSING INDUSTRIES IN A 50-MILE RADIUS
AROUND CARROLLTON, GEORGIA
(September 1962)

Industry	Carroll County		Fulton-DeKalb Counties		Total in 50-Mi. Carrollton Radius	
	No. Plants	Emp.	No. Plants	Emp.	No. Plants	Emp.
Meat packing	2	101	5	677	16	1,150
Sausage and other prepared meat production	1	16	10	366	14	484
Poultry and small game dressing and packing	1	184	3	923	7	1,472
Ice cream, frozen desserts	-	-	7	214	12	247
Special dairy products	-	-	1	595	3	610
Fluid milk	1	47	8	1,395	17	1,661
Canned specialties	-	-	1	20	1	20
Canned fruits and vegetables; preserves, jams and jellies	-	-	5	115	6	549
Dried and dehydrated fruits and vegetables	-	-	-	-	1	245
Pickled fruits and vegetables; vegetable sauces, seasonings, and dressings	-	-	3	155	3	155
Frozen fruit juices, vegetables, and specialties	-	-	2	15	2	15
Flour and grain mill products	-	-	-	-	8	157
Prepared feeds for animals and fowls	3	17	10	214	19	379
Blended and prepared flour	-	-	1	2	3	25
Wet corn milling	-	-	1	17	1	17
Bread and other bakery products, except biscuits, crackers and pretzels	-	-	17	2,506	30	3,046
Biscuits, crackers, and pretzels	-	-	2	908	2	908
Candy and other confectionary products	-	-	8	454	9	461
Malt liquor	-	-	1	175	1	175
Wine, brandy and brandy spirits	-	-	1	35	1	35
Bottled and canned soft drinks and carbonated waters	2	40	10	1,078	37	1,842
Flavoring extracts and syrups, n.e.c.*	-	-	5	843	5	843
Cottonseed oil	-	-	1	20	1	20
Grease and tallow	-	-	2	62	3	80
Shortening, table oils, margarine, and other edible fats and oils, n.e.c.*	-	-	3	258	3	258
Manufactured ice	1	3	3	196	15	318
Food preparations, n.e.c.*	-	-	21	1,645	21	1,645
Total	11	408	131	12,888	241	16,817

*n.e.c. -- not elsewhere classified in the Standard Industrial Classification Manual, Executive Office of the President, Bureau of the Budget, Office of Statistical Standards, 1957.

Note: Counties in a 50-mile radius of Carrollton include the 16 Georgia counties listed in Table 3 plus DeKalb County, Georgia, and six Alabama counties -- Calhoun, Chambers, Cherokee, Clay, Cleburne, and Randolph.

Sources: Georgia Department of Labor, Employment Statistics, September 1962; Alabama Department of Industrial Relations.

A successful feed lot not only could stimulate an increase in quantity and improvement in quality of cattle produced in the county, but also would attract distant buyers, thus providing a better market opportunity. Handling and feeding efficiency would be optimum, and labor and supervision requirements on the farm would not be increased.

In addition to improving agricultural income, a commercial feed lot would also indirectly promote the local meat processing and feed and grain milling industries.

According to a recent survey, "At least 75 to 80 tons of meat are processed weekly in Carroll County, and this is only 70% to 80% of the maximum potential output."^{1/} Most of the cattle now available locally and elsewhere in Georgia at auction sales barns are feeder calves, culls, and canners; a similar problem exists in the procurement of premium quality hogs. Consequently, meat packers now in the county often must scour an area approximately 100 miles in radius in order to secure sufficient livestock of suitable quality. A year-round feed lot program would simplify this problem and could lead to the expansion of this industry.

Presently, the feed and grain mills are the only part of Carroll County's food industry which seems to be running at considerably less than the maximum potential offered by existing facilities. This is due primarily to the decline in broiler prices. These mills would welcome the opportunity to decrease poultry feed production while increasing hog and cattle feed output.^{2/}

A commercial feed lot could be instituted either as a farmers' cooperative or as a private company. A private company probably would buy the cattle from the farmer, while a cooperative feed lot would accept cattle on consignment. Minimum standards would have to be set to prevent too broad a grouping of animals of different grades. A steady, year-round flow of livestock would be necessary in order to permit local meat packers to develop markets to utilize the meat produced. Farmers also would have to be encouraged to upgrade the quality of their animals.

^{1/} M. Dale Henson and Robert H. McDonough, Audit and Evaluation of Manufacturing Operations in Carroll County, Georgia, Industrial Development Division, Engineering Experiment Station, Georgia Institute of Technology, Atlanta, Georgia, February 1963, p. 51.

^{2/} Henson and McDonough, pp. 52-53.

Wood-Based Industry Potentials

In the wood-based industry field, expansion of Carroll County's furniture industry should be considered. According to a recent study, opportunities for the manufacture of non-upholstered wood household furniture are excellent in Georgia.^{1/} Major Atlanta furniture retailers selling medium to low price items have stated that there is a recognized need for local producers of case goods (non-upholstered items). Prospects are also good for manufacturing filler pieces for wood or plastic veneer furniture.

Carrollton is only 50 miles from Atlanta, the hub of the large and expanding southeastern furniture market. Sales in Atlanta alone are estimated to exceed \$22 million annually. In addition, a Carroll County manufacturer would have available the extensive display facilities of the Atlanta Merchandise Mart. Since the cost of shipping furniture (especially non-upholstered) is a significant percentage of manufacturer's value, a Carroll County producer would have a large freight advantage over present major manufacturers in North Carolina and Virginia.

Based on the availability of timber alone, it would be possible to put a pulp mill with a 400-ton daily capacity in Carroll County; but, since the county is short of water, this possibility is ruled out. It would be feasible, however, to establish some type of pulp-based converting plant. There are 39 plants with over 5,000 employees engaged in different pulp- and paper-based manufacturing activities in DeKalb and Fulton counties, neither of which has a primary pulp mill. Since Carroll County is close to the Rome Kraft Company and the Atlanta Metropolitan Area, the opportunity in converting activities might well be exploited.

Existing firms in Carroll County's lumber industry have reported that the dwindling local supply of high quality saw timber, caused by short-sighted cutting practices in the past, has forced them to secure wood from Alabama or neighboring counties. It appears, therefore, that the best industrial

^{1/} George W. Morris, Jr., Wood Household Furniture: A Manufacturing Opportunity in Georgia, Industrial Development Division, Engineering Experiment Station, Georgia Institute of Technology, Atlanta, Georgia, September 1963.

opportunities based upon local timber resources would be in the manufacture of products using low-grade and small-diameter timber.

Since 57% of the standing saw timber in Carroll County consists of hard hardwoods (predominantly oak) and the volume is increasing annually, finding ways to utilize oak and other hardwood species should be an important consideration in developing the economy of the country. A previous report published by the Industrial Development Division suggests: "Manufacturing (wooden) pallets, together with other wood products such as flooring, may be the ideal choice in utilizing local resources for acquiring new industries and new pay-rolls for the county."^{1/}

Wooden pallets are low, portable platforms which are used to facilitate handling, storage, and transportation of materials as a unit. They generally are manufactured in conjunction with other products, such as boxes and crates, lumber, flooring, and dimensional stock. Low grades and short ends are utilized for pallets; high grades and full length lumber are reserved for flooring and dimensional stock. Pallet plants usually are located near an adequate lumber supply and close to manufacturing cities because of the relatively low price and the bulky nature of pallets.

A pallet plant producing 150,000 units a year may require 3,750,000 board feet of low-grade oak lumber, an amount which can be produced easily in Carroll County alone. Within a 150-mile radius of Carrollton, the distance generally considered the economical market area for pallets, are seven cities representing 80% of the pallet market potential in the area. The current market in this area is 1.1 million to 1.3 million units a year and is projected to 2.8 million units by 1975. Only about 73% of the current demand is being supplied by manufacturers in the area.

The existing facilities of any lumber mill or millwork plant can be utilized for pallet production. Equipment costs are low -- from \$5,000 to over \$100,000 -- depending upon degree of mechanization. Gross profit averages 16.68% of sale price. Since human labor plays an important role in pallet production, a pallet plant would aid the employment situation in Carroll County.

^{1/} Tze I. Chiang, Wooden Pallets: A Manufacturing Opportunity in Carroll County, Georgia, Industrial Development Division, Engineering Experiment Station, Georgia Institute of Technology, Atlanta, Georgia, August 1963, p. 19.

A variety of other uses can be found for low-grade soft or hardwood. Some of them are warehouse dividers and stock shelves; yard toys; tool sheds, doghouses, and playhouses; tool chests, tool racks, and work benches; yard fences, trellises, and lattices; and saw horses and step ladders. These products do not require finishing qualities or adherence to exact dimensions, and they could actually supply scraps for pallets. The marketability of these items has been verified by representatives of several retail outlets and warehouses in the Atlanta area.

The demand for wood is tending more and more to synthetic types of materials, such as hardboard, insulation board, and particle board. These new products can utilize low-grade and small-diameter timber for raw material. Although capital investment costs for a wood particle board or hardboard plant are quite high, establishment of such an operation could turn the overabundance of less desirable timber in Carroll and its neighboring counties to advantage. There are presently no particle board or hardboard plants in Georgia.

Wood particle board is a composite product made of splinters, shavings, flakes, or chips which are bonded by resin under high pressure. Solid cordwood is the raw material for flakeboard, while wood wastes from logging camps, sawmills, planing mills, and manufacturing operations are utilized in the manufacture of shaving boards and splinter boards. Either softwood or hardwood residue may be used. Much particle board is produced as a part of the integrated operation of large or medium-sized furniture plants. Lumber and plywood manufacturers also frequently diversify into particle board manufacture.^{1/}

The magnificent growth of the particle board industry in the past 10 years can be matched only by the growth of the plywood industry in the early 1930's, and it offers vast potentials for the future. A commercial plant with a 60-ton daily capacity (equivalent to 15 million square feet a year) requires 15,000 cords of pine or soft hardwood a year. The availability of pulpwood in the area could supply over 20 times this amount. In Carroll County alone, 31,850 cords of pine were sold for pulpwood in 1959. Profit before taxes would range in the neighborhood of 10% to 12%.

^{1/} Tze I. Chiang and Ben W. Carmichael, Wood Particle Board: A Manufacturing Opportunity in Georgia, Industrial Development Branch, Engineering Experiment Station, Georgia Institute of Technology, Atlanta, Georgia, March 1959.

Hardboard manufacturing is another possibility. Fiber or hardboards are made from disintegrated natural wood fibers pressed together either without or with very little resin binder. Nearly any species of wood is suitable. Low-grade and small-size logs, wood wastes, or wood residues may be used. The best utilization of low-grade hardwood may be in the integrated operation of a hardboard plant with existing sawmills or pulp mills.

In the last 20 years, hardboard production has increased 10 times and consumption 11 times in the United States. In 1961, it was estimated that consumption exceeded production by 10% -- the excess demand was supplied by imports. Domestic production of hardboard is expected to increase 83% between 1960 and 1970, while consumption may increase 92%. An additional capacity of 1.2 billion square feet annually probably will be needed by 1970.^{1/}

Since two-thirds of all timber in Carroll County and one-half of the timber in the area are in hardwood species, the possibility of hardboard manufacturing needs to be explored. A hardboard plant with 200-ton daily capacity (equivalent to 160 million square feet a year) requires 44,000 cords of hardwood a year. The area could afford four to five times this amount.

A wood particle board plant with 60-ton daily capacity may require \$1 million to \$2 million investment. A hardboard plant with 200-ton daily capacity may need \$4 million to \$5 million investment. Although these costs are high, the possibility of obtaining loans and technical assistance through the Area Redevelopment Administration or the Small Business Administration should not be overlooked. The Federal government has been paying increased attention to loan applications for the establishment of hardboard and particle board plants. The opportunity offered should be carefully weighed by the development group in Carroll County.

^{1/} Tze I. Chiang, The Hardboard Industry and Its Future in the U. S., the Southeast, and in Georgia, Industrial Development Branch, Engineering Experiment Station, Georgia Institute of Technology, Atlanta, Georgia, August 1961, pp. v-vi.

CONCLUSION

Establishment of a commercial feed lot offers the greatest potential for developing the agricultural economy of Carroll County. Not only would it stimulate an increase in the quantity and improvement in the quality of cattle produced, it would also indirectly encourage expansion of local meat processing plants and feed and grain mills.

In the wood-based industry field, plans should be made to utilize the low-grade and small-diameter timber (particularly hardwood) which predominates in the area around Carrollton.

Perhaps the best and most immediate opportunity for new wood-based industry in Carroll County lies in the manufacture of wooden pallets in conjunction with other wood products which also use low-grade timber, such as:

- warehouse dividers and stock shelves
- yard toys
- tool sheds, doghouses, and playhouses
- tool chests, tool racks, and work benches
- yard fences, trellises, and lattices
- saw horses and step ladders

These items do not require finishing qualities or adherence to exact dimensions, and they could actually supply scraps for pallets.

A more ambitious undertaking would be the establishment of a wood particle board or hardboard plant. Timber resources in the area could easily support either type of operation. In addition, the markets for both of these products offer vast potentials for future growth.